Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended): ~~An~~ A purified α-isomaltosylglucosaccharide- forming enzyme, which forms a saccharide, having a glucose polymerization degree of at least three and having both the α-1,6 glucosidic linkage as a linkage at the non-reducing end and the α-1,4 glucosidic linkage other than the linkage at the non-reducing end, by catalyzing the α-glucosyl-transfer from a saccharide having a glucose polymerization degree of at least two and having the α-glucosidic linkage as a linkage at the non-reducing end without substantially increasing the reducing power; and having an amino acid sequence of SEQ ID NO:1, 11 or 18 and molecular weight of about 94,000 ± 20,000 or about 140,000 ± 20,000 daltons on SDS-PAGE.

2. (Cancelled)

3. (Currently amended): The purified α-isomaltosylglucosaccharide-forming enzyme of claim 1~~or two~~, wherein said saccharide, having a glucose polymerization

degree of at least two and having the α-1,4 glucosidic linkage as a linkage at the non-reducing end, is one or more members selected from the group consisting of maltooligosaccharides, maltodextrins, amylodextrins, amyloses, amylopectins, soluble starches, liquefied starches, and glycogens.

4. (Currently amended): ~~An~~ A purified α-isomaltosylglucosaccharide-forming enzyme which is obtainable from a microorganism of the genus *Bacillus* and ~~having~~ has the following physicochemical properties:

(1) Action

Forming a saccharide, which has a glucose polymerization degree of at least three and has both the α-1,6 glucosidic linkage as a linkage at the non-reducing end and the α-1,4 glucosidic linkage other than the linkage at the non-reducing end, by catalyzing the α-glucosyl-transfer from a saccharide having a glucose polymerization degree of at least two and having the α-1,4 glucosidic linkage as a linkage at the non-reducing end without substantially increasing the reducing power;

(2) Molecular weight

~~Having a molecular weight of about 74,000 to about 160,000 daltons when determined~~ About 140,000 ± 20,000 daltons on SDS-PAGE;

(3) Isoelectric point (pI)

~~Having an isoelecric point of about 3.8 to about 7.8 when determined~~ About 4.7 to 7.8 on isoelectrophoresis using ampholine;

(4) Optimum temperature

~~Having an optimum temperature of about 40° to about 50°~~ About 40 to 50° when incubated at a pH of 6.0 for 60 min;

~~Having an optimum temperature of about 45° to about 55°~~ About 40 to 50° when incubated at a pH of 6.0 for 60 min in the presence of 1 mM Ca^{2+};

~~Having an optimum temperature of about 60° when incubated at a pH of 8.4 for 60 min; or~~

~~Having an optimum temperature of about 65° when incubated at a pH of 8.4 for 60 min in the presence of 1 mM Ca^{2+};~~

(5) Optimum pH

~~Having an optimum pH of about 6.0 to about 8.4~~ About 6.0 to 6.5 when incubated at 35° for 60 min;

(6) Thermal stability

~~Having a thermostable region at temperatures~~Stable up to a temperature of about 45° ~~**or lower**~~ when incubated at a pH of 6.0 for 60 min;

~~Having a thermostable region at temperatures~~ Stable up to a temperature of about 50° ~~**or lower**~~ when incubated at a pH of 6.0 for 60 min in the presence of 1 mM Ca^{2+};

~~Having a thermostable region at temperatures of about 55° **or lower** when incubated at a pH of 8.0 for 60 min, and~~

~~Having a thermostable region at temperatures of about 60° **or lower** when incubated at a pH of 8.0 for 60 min in the presence of 1 mM Ca^{2+}; and~~

(7) pH stability

~~Having a stable pH region at~~ Stable at pHs of about 4.5 to ~~about~~ 10.0 when incubated at 4° for 24 hours;

(8) Incapable of forming dextran;

(9) Inhibited by EDTA; and

(10) Stabilized and/or activated by Ca^{2+} and Mn^{2+}.

5. (Cancelled)

6. (cancelled)

7. (Cancelled)

8. (Currently amended): A process for producing the purified α-isomaltosylglucosaccharide-forming enzyme of any one of claims 1, ~~2~~, 4 or ~~5~~ 44, which comprises:

culturing in a nutrient culture medium a microorganism capable of producing said enzyme;

and collecting said enzyme from the resulting culture.

9. (Original): The process of claim 8, wherein said microorganism is of the genus *Bacillus* or *Arthrobacter*.

10. (Original): The process of claim 9, wherein said microorganism of the genus *Bacillus* is one selected from the group consisting of *Bacillus globisporus* C9, FERM BP-7143; *Bacillus globisporus* C11, FERM BP-7144; *Bacillus globisporus* N75, FERM BP-7591; and mutants thereof.

11. (Original): The process of claim 9, wherein said microorganism of the genus *Arthrobacter* is one selected from the group consisting of *Arthrobacter globiformis* A19, FERM BP-7590; and mutant thereof.

12. (Currently amended): A method of α-glucosyl-transferring reaction, which comprises a step of contacting the purified ~~α-isomaltosyl-glucosaccharide-transferring~~ α-

isomaltosylglucosaccharide-forming enzyme of any one of claims 1, ~~2,~~ 4 or ~~5~~ 44 with a solution comprising a saccharide having a glucose polymerization degree of at least two and having the α-1,4 glucosidic linkage as a linkage at the non-reducing end.

13. (Original) The method of claim 12, wherein a saccharide-transferred product is formed by the α-glucosyl-transferring reaction in the presence of one or more acceptors selected from the group consisting of D-glucose, D-xylose, L-xylose, D-galactose, D-fructose, D-mannose, D-arabinose, D-fucose, D-psicose, L-sorbose, methyl- β -glucopyranoside, methyl-β-glucopyranoside, N-acetylglucosamine, trehalose, isomaltose, isomaltotriose, cellobiose, gentibiose, glycerol, maltitol, lactose, sucrose, and L-ascorbic acid.

14. (Currently amended) A method for forming α-isomaltosyl- glucosaccharide, which comprises a step of contacting the purified ~~α-isomaltosyl- glucosaccharide-transferring~~ α-isomaltosylgluco-saccharide-forming enzyme of claims 1, ~~2~~, 4 or ~~5~~ 44 with a solution, comprising a saccharide having a glucose polymerization degree of at least two and having the α-1,4 glucosidic linkage as a linkage at the non-reducing end, to effect α-glucosyl-transferring reaction.

15. (Original): The method of claim 14, wherein said saccharide is one selected from the group consisting of maltooligosaccharides, maltodextrins, amylodextrins, amyloses, amylopectins, soluble starches, liquefied starches, and glycogens.

16. - 42. (Deleted)

43. (New): The purified α-isomaltosylglucosaccharide-forming enzyme of claim 4, wherein the microorganism of the genus *Bacillus* is one selected from the group consisting of *Bacillus globisporus* C9, FERM BP-7143; *Bacillus globisporus* C11, FERM BP-7144; and *Bacillus globisporus* N75, FERM BP-7591; and mutants thereof.

44. (New): A purified α-isomaltosylglucosaccharide-forming enzyme which is obtainable from a microorganism of the genus *Arthrobacter* and has the following physicochemical properties:

(1) Action

Forming a saccharide, which has a glucose polymerization degree of at least three and has both the α-1,6-glucosidic linkage as a linkage

at the non-reducing end and the α-1,4 glucosidic linkage other than the linkage at the non-reducing end, by catalyzing the α-glucosyl transfer from a saccharide having a glucose polymerization degree of at least two and having the α-1,4 glucosidic linkage as a linkage at the non-reducing end without substantially increasing the reducing power;

(2) Molecular weight

About 94,000 ± 20,000 Daltons on SDS-PAGE;

(3) Isoelectric point (pI)

About 3.8 to 4.8 on isoelectrophoresis using ampholine;

(4) Optimum temperature

About 60°C when incubated at a pH of 8.4 for 60 minutes;

About 65°C when incubated at a pH of 8.4 for 60 minutes in the presence of 1 mM Ca^{2+};

(5) Optimum pH

About 8.4 when incubated at 35°C for 60 minutes;

(6) Thermal stability

Stable up to a temperature of about 55°C when incubated at a pH of 8.0 for 60 minutes;

Stable up to a temperature of about 60°C when incubated at a pH of 8.0 for 60 minutes in the presence of 1 mM Ca^{2+};

(7) pH stability

Stable at pH of about 5.0 to about 9.0 when incubated at 4°C for 24 hours;

(8) Incapable of forming dextran;

(9) Inhibited by EDTA;

(10) Stabilized and activated or stabilized or activated by Ca^{2+} and Mn^{2+}.

45. (New): The purified α-isomaltosylglucosaccharide-forming enzyme of claim 44, wherein said microorganisms of the genus *Arthrobacter* is one selected from the group consisting of *Arthrobacter globiformis* A19, FERM BP-7590, and mutants thereof.

46. (New): A biologically pure culture containing the α-isomaltosylglucosaccharide-forming enzyme of claims 1, 4, or 44.